

Attorney Docket No. U0186 OS/MINPT
Serial No. 10/631,299
Art Unit: 1742
Applicants' Reply to Office Action July 6, 2005

Amendments to the Claims

Please amend claim 14 as shown in the Listing of Claims below. The amendment adds no new matter. This Listing of Claims will replace all prior versions, and listings of the claims in the application

Listing of Claims:

Claim 1 (Original): A circuit configuration for a metal solvent extraction plant comprising:

- A) an extraction section for extracting metal ions from an aqueous leach solution containing the metal ions with an organic solvent solution containing at least one metal extraction reagent, wherein the extraction section consists of three countercurrent extraction stages; and
- B) a stripping section consisting of one stripping stage for stripping the metal ions from the metal extraction reagent.

Claim 2 (Original): The circuit configuration of claim 1 wherein the stripping stage is connected to one of the extraction stages.

Claim 3 (Original): The circuit configuration of claim 2 wherein the stripping stage is connected to the third extraction stage.

Claim 4 (Canceled)

Claim 5 (Canceled)

Claim 6 (Canceled)

Claim 7 (Canceled)

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Claim 8 (Canceled)

Claim 9 (Original): The circuit configuration of claim 1 wherein the solvent extraction circuit also comprises a wash or scrubbing stage.

Claim 10 (Original): A method for increasing the metal recovery on a metal solvent extraction plant that comprises two extraction stages in combination with two stripping stages, comprising reconfiguring the plant to contain three countercurrent extraction stages in combination with one stripping stage.

Claim 11 (Original): The method of claim 10 wherein the metal solvent extraction plant is a copper metal solvent extraction plant.

Claim 12 (Original): In a metal solvent extraction plant for extracting metal from a metal ore, wherein the plant contains an extraction section for extracting metal ions from an aqueous leach solution using a substantially water-immiscible organic solvent containing at least one metal extraction reagent, and a stripping section for stripping the metal ions from the metal extraction reagent, the improvement wherein the extraction section consists of three countercurrent extraction stages, and the stripping section consists of one stripping stage.

Claim 13 (Canceled)

Claim 14 (Currently amended): A solvent extraction process for extracting metals from an aqueous leach solution containing metal values comprising the steps of:

- I) contacting said aqueous leach solution containing metal values with a water-immiscible organic solvent containing an extraction reagent in a first extraction stage to extract metal values from said leach solution;
- II) separating the resulting metal value-containing organic solvent from the aqueous leach solution;

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- III) contacting the separate aqueous leach solution from step II) with a water-immiscible organic solvent containing an extraction reagent in a second extraction stage to further extract metal values from the aqueous leach solution;
- IV) separating the resulting aqueous leach solution from the water-immiscible organic solvent;
- V) contacting the separated aqueous leach solution from step IV) with a water-immiscible organic solvent containing an extraction reagent in a third extraction stage to extract additional metal values from the aqueous leach solution from step IV; and
- VI) separating the resulting aqueous leach solution from the water-immiscible organic solvent,

wherein the flow of the water immiscible organic solvent is counter to the flow of the aqueous leach solution, and

wherein the separated metal-value containing organic solvent from step ~~IV~~ VI is contacted with an aqueous acidic strip solution in a single strip stage to strip metal values therefrom.

Claim 15 (Original): The process of claim 14 wherein in step I) the aqueous leach solution is an aqueous acidic leach solution containing copper values.

Claim 16 (Original): The process of claim 14 wherein the aqueous leach solution is an aqueous basic leach solution containing nickel values.

Claim 17 (Canceled)

Claim 18 (Canceled)

Claim 19 (Previously presented): The process of claim 14 wherein the stripped water-immiscible organic solvent from the strip stage is used in step V).

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Claim 20 (Original): The process of claim 19 wherein the water-immiscible organic solvent from step VI) is used in step III) and the water-immiscible organic solvent from step IV) is used in step I).

Claim 21 (Original): The process of claim 14 wherein the extraction reagent used in the process comprises an alkylated hydroxyoxime.

Claim 22 (Original): The process of claim 21 wherein the extraction agent comprises an alkylated acetophenone oxime and/or an alkylated salicylaldoxime.

Claim 23 (Original): The process of claim 21 wherein the extraction reagent comprises a mixture of an alkylated acetophenone oxime and an alkylated salicylaldoxime.

Claim 24 (Original): The process of claim 21 wherein the extraction agent comprises 5-nonyl-2-hydroxyacetophenone oxime and/or 5-nonylsalicylaldoxime.

Claim 25 (Original): The process of claim 14 wherein the process also comprises at least one wash or scrubbing stage.